



Docket No.: K0502.70037US00  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Basil Karanikos et al.  
Serial No.: 10/658,925  
Confirmation No.: 3129  
Filed: September 10, 2003  
For: BEVERAGE FILTER CARTRIDGE  
Examiner: S. U. Kim  
Art Unit: 1723

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Dated: 7.9.07

**DECLARATION UNDER RULE 132**

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

1. I, Karl Winkler, have been asked by Keurig, Incorporated to objectively assess a rejection of patent claims made in the above-identified application.
2. For the past approximately 9 months, I have been the Vice President and General Manager, Engineering and Product Development for Kronos Incorporated, which has a place of business at 297 Billerica Road, Chelmsford, MA 01824. Prior to that, I served for 3 years as Vice President, Engineering for Armatron International, redesigning and launching lines of commercial and consumer products for Sam's Club, Costco, Flowtron, Outdoor Products and The Sharper Image. Prior to that, I worked as a senior product development engineer for Keurig, Incorporated, developing commercial and consumer single cup coffee brewing systems. Prior to that, I worked for The Schawbel Corporation, designing and developing products for such customers as Conair,

Black & Decker, Craftsman, S.C. Johnson, Philips, Scripto-Tokia and Sanyei/Koizumi. I have approximately 3 years of experience related to beverage cartridge brewing systems.

3. Regarding my formal educational background, I received a Bachelors of Science in Electrical Engineering from Northeastern University.

4. During my employment with Keurig, Incorporated from September 2000 to September 2003, I was active in designing, testing and otherwise developing two different single cup brewing systems that use a beverage filter cartridge like that described in the Sylvan patent cited below. My tenure with Keurig, Incorporated included time prior to, during and after development of the beverage filter cartridge including a fluted filter that is the subject of the above-identified patent application.

5. I have reviewed the Office Action dated January 30, 2007, references in the Office Action that are used to reject the claims (i.e., U.S. Patent 5,325,765 to Sylvan, PCT publication WO 91/14389 to Frise, U.S. Patent 3,971,305 to Daswick, and U.S. Patent 3,389,650 to Michielsen), and the currently pending claims in this application. (I note that sections of the Office Action rejecting dependent claims refer to references "Lesser" and "Tanner" but the relevance of these references is not clear given that no rejection of claims is made in view of these references.)

6. I understand that independent claims 1, 12 and 44 in this application generally recite a beverage filter cartridge including:

- a container having a bottom and sidewall extending upwardly from the bottom to a top opening;

- a filter element having a bottom and a sidewall extending upwardly from the bottom, where the filter element is directly joined at a peripheral juncture to the container sidewall and the filter sidewall has pleats, flutes or corrugations; and

- a cover that closes the top opening.

Claim 1 also requires that pleats or flutes in the filter element form exit channels between the filter sidewall and the cartridge sidewall that lead to a second chamber below the filter element. Claims

12 and 44 also require that at least a portion of the filter sidewall is spaced inwardly from and out of contact with the container side wall. Claim 12 requires that the filter sidewall includes at least a portion that is permeable.

7. I understand that the Office Action rejects independent claims 1, 12 and 44 based on the purported obviousness of combining a pleated/fluted filter disclosed in Frise into the beverage cartridge of Sylvan. The examiner asserts that reasons for combining the fluted Frise filter in the Sylvan cartridge are:

to augment the self-supporting aspect of the filter under any condition of distortion including mechanical and thermal stresses and stresses of the filter being removed for washing and cleaning prior to re-insertion. That is, making the filter fluted or pleated as in Frise would make the filter more resiliently self-supporting.

8. With respect to the rejection of claims 1, 12 and 44, I disagree with the Examiner regarding the stated reasons why one of ordinary skill in the art would have modified the Sylvan cartridge to include a pleated filter as described in Frise. For example, the examiner assumes that resiliency of a filter element in the Sylvan cartridge is inherently desirable. This is simply not true. Although Sylvan discloses that the filter element should be self-supporting in the sense that it should not collapse against the container when attached to the container wall and wetted (col. 1, lines 50-53 of Sylvan), Sylvan never discloses that the filter should be resilient. (The filter is disclosed to be made of a heat sealable paper of cellulosic and synthetic fibers in a smooth conical shape – col. 3, lines 4-6). In fact, one of ordinary skill in the art reading Sylvan would more likely conclude that the filter element should be more rigid than resilient so that the filter element would not collapse or otherwise distort so as to come into contact with the cartridge sidewalls during use. A conical filter element fixed within a container like that shown in Fig. 2 of Sylvan would be quite rigid in resisting high pressure introduced into the filter element by way of the inlet needle 70 (see Fig. 4 and col. 4, lines 21-24 of Sylvan). That is, with the conical filter element fixed to the sidewall of the cartridge and pressurized hot water injected into the cartridge, the filter element would have little ability or tendency to deform and contact the container sidewalls because the filter paper of the filter element

(not a highly stretchable material) and its configuration in the cartridge (a cone) will not allow substantial expansion or other deformation of the filter element.

In contrast, Frise teaches that the disclosed fluted filter element is highly flexible and resilient so that the filter sidewalls closely conform to the filter basket and the filter “moulds itself to the full shape of the supporting brewing funnel basket.” (See Frise page 3, lines 12-15 and page 4, lines 15-19, emphasis added). Thus, although the Frise filter element is resilient (not a desirable feature for a filter in the Sylvan cartridge), it is not “self-supporting” at all. Instead, the brew basket is said to support the filter element, which moulds itself to the basket. This makes sense, since conformation of the filter element to its supporting brew basket is the purpose of a fluted filter according to Frise. However, based on the teachings of Frise, if the filter element in Sylvan was highly resilient and fluted like that in Frise, one of skill in the art would have understood that the use of that filter element in a Sylvan cartridge would tend to conform to and contact the cartridge container walls – a result that is explicitly taught to be avoided by Sylvan (see col. 3, lines 10-26). Furthermore, one of skill in the art would have understood that introduction of pressurized water into the fluted filter would cause the filter element to further expand (e.g., tending to stretch or flatten the sidewall flutes under the internal pressure) and contact the cartridge sidewalls. Thus, one of ordinary skill in the art would have understood that the use of a fluted filter element like that of Frise in the Sylvan cartridge would introduce a highly resilient and conformable filter element that can expand and conform to the cartridge walls upon the introduction of pressurized water into the cartridge. The high resiliency and larger surface area of the fluted filter element would not allow it to resist deformation and potential contact with the container walls when under pressure during beverage creation. Since Sylvan expressly discloses that the filter element should not contact the container sidewalls during beverage formation, one of ordinary skill in the art would have considered a fluted filter like that in Frise to be unsuitable for use in a Sylvan cartridge.

Also, one of skill in the art would not have considered the resiliency of the Frise filter “under ... stresses of the filter being removed for washing and cleaning prior to re-insertion” as relevant to forming a cartridge like that described in Sylvan. The filter in the Sylvan cartridge is never removed from the cartridge for washing and cleaning, or re-inserted into the container.

Instead, the filter element in the Sylvan cartridge is permanently fixed in the container, is used once, and then discarded. Thus, resiliency of the filter element as it relates to the filter element's ability to withstand removal, cleaning and re-insertion would have been considered totally irrelevant to one of ordinary skill in the art when considering filter element modifications for the Sylvan cartridge. Also, as discussed above, one of skill in the art would have interpreted Sylvan as explaining that distortion of the filter element should generally be kept to a minimum while the cartridge is in operation (i.e., with pressurized water being introduced) so that the filter element remains out of contact with the container sidewalls and so that the filter is not pierced by the outlet needle 74 (see Fig. 4 of Sylvan). The fact that a filter element may be resilient to resume its shape after pressure or other distorting force is released is not relevant to the filter's function in a cartridge like that in Sylvan – once the pressure has been released, the cartridge and its filter have completed their function and are to be discarded. Whether a discarded cartridge has a filter element with an appropriate shape or configuration is not important. Instead, the question one of ordinary skill in the art would have considered is whether a resilient, conformable fluted filter element would contact the container sidewalls when wetted and under pressure. In my opinion, one of ordinary skill in the art would have believed that the resilient, compliant nature of a fluted filter element like that in Frise was not suitable for use in a Sylvan-type cartridge, mainly out of a concern that the filter element would not be able to maintain a suitable shape (i.e., is not self-supporting) and remain out of contact with the cartridge walls while pressurized water is introduced into the cartridge during a beverage formation process.

9. In addition to the above, one of ordinary skill in the art would not have had a reasonable expectation of success in incorporating the fluted filter of Frise in a Sylvan cartridge for reasons other than the undesirability of using a highly conformable filter in place of the conical filter disclosed in Sylvan. For example, Frise discloses that the filter is made rigid at its upper peripheral edge to aid in maintaining the filter's shape (see Frise page 3, lines 2-7 and lines 45-49). From my experience with beverage filter cartridges, I can attest to the fact that securing a fluted filter element with a rigid top edge as disclosed in Frise would be difficult, if not impossible, to accomplish. In contrast, a fluted filter must be compliant, not rigid, at its top edge to allow the filter to be suitably



sealed in place to the container. As a result, one of ordinary skill in the art would have viewed the filter element of Frise as incompatible with use in a Sylvan-type cartridge.

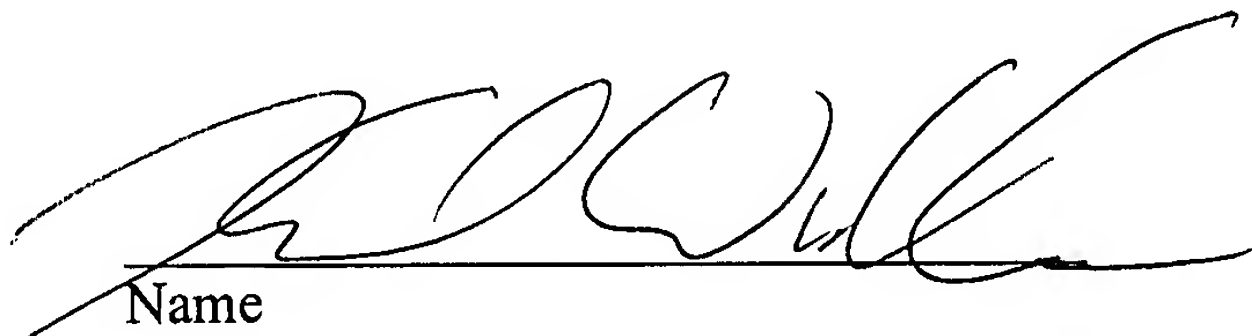
10. In short, it is my opinion that teachings regarding a filter element for use in a drip-type coffee brewer, like that in Frise, are not necessarily suitable for use in forming a beverage cartridge having a filter element and that is used to form beverages using injected, pressurized water. The functioning of the filter element in a drip-type brewer is quite different from that in the Sylvan cartridge. The Frise filter element is supported from the bottom and sides, and most of the beverage flow occurs through the bottom of the filter element due to gravity (see Frise in the sentence bridging pages 2 and 3). In contrast, the filter element in the Sylvan cartridge is subjected to pressure during beverage formation, and flow through the filter is the result of pressure driving the liquid through the filter in nearly all directions, not one direction due to gravity. This pressure places significantly more stress on the filter sidewall than that experienced during drip-type brewing, and requires the filter element to function in a different way. As a result, one of ordinary skill in the art would not necessarily have concluded that because a filter configuration (i.e., a fluted filter sidewalls) is suitable for use in drip-type brewing, that the same configuration would be suitable for use in pressurized cartridge-based beverage formation. This is especially true where the reason for the fluted sidewalls (conformance of the filter sidewalls to the filter support) is in direct contradiction to the teachings of Sylvan that the filter sidewall should avoid contact with the container sidewall.

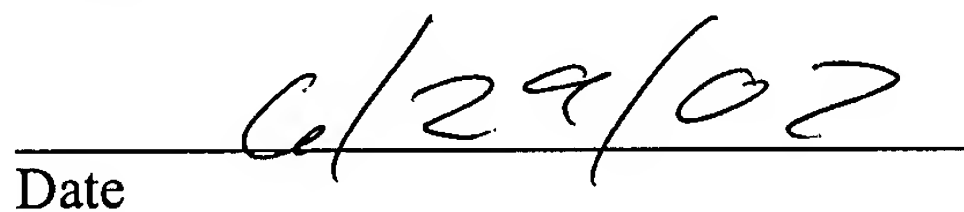
In fact, the use of a pleated, fluted or corrugated filter element as set forth in claims 1, 12 and 44 is not the predictable use of a prior art element according to its established function. Although fluted sidewall filters were known for gravity-driven drip-type brewing, pleated, fluted or corrugated filter elements were not used in pressurized cartridge-type beverage formation. Thus, one of ordinary skill in the art would not have been able to predict whether use of such a filter element in a beverage cartridge like Sylvan would have been successful since there was no established function of such filter elements for that application. To the contrary, the known function of a fluted filter element was that its sidewalls would conform to and contact the sidewalls of a supporting basket – in direct contrast to the desired function of a filter sidewall in a Sylvan

cartridge. It is my opinion that nothing in Frise would have suggested to one of ordinary skill in the art that the disclosed fluted filter would be suitable for use in any application other than one in which the filter is supported on the bottom and sides, much less suitable for use in a Sylvan beverage cartridge.

11. In view of the above, it is my opinion that the rejection of independent claims 1, 12 and 44 in the Office Action is not sustainable, in part because it is based on inaccurate or unfounded reasons for combining features of the prior art. That is, the Office Action has not articulated at least one reason why one of ordinary skill in the art would have used a fluted filter like that in Frise in a Sylvan beverage cartridge. To the contrary, there are several reasons described above why one of ordinary skill in the art would not have used such a filter in the Sylvan cartridge.

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above application and any patent or application related thereto.

  
Name

  
Date